

mitsubishi

MELSECNET/H

Network Module

User's Manual
(Installation)

QJ72LP25-25, QJ72LP25G
QJ72BR15

Thank you for buying the Mitsubishi general-purpose programmable logic controller MELSEC-Q Series

Prior to use, please read both this manual and detailed manual thoroughly and familiarize yourself with the product.

MELSEC-Q

Mitsubishi Programmable
Logic Controller

● SAFETY PRECAUTIONS ●

(Always read these instructions before using this equipment.)

Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to handle the product correctly.

Precautionary notes in this manual cover only the installation of this product. For precautions on designing and discarding this product, refer to "Safety Precautions" in the MELSECNET/H Reference Manual.

For safety precautions on the PLC system, refer to the CPU User's Manual.


In this manual, the safety instructions are ranked as "DANGER" and "CAUTION".



Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.



Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.

Note that the  **CAUTION** level may lead to a serious consequence according to the circumstances.

Always follow the instructions of both levels because they are important to personal safety.

Please save this manual to make it accessible when required and always forward it to the end user.

[INSTALLATION PRECAUTIONS]

CAUTION

- Use the PLC in an environment that meets the general specifications contained in CPU module user's manual.
Using this PLC in an environment outside the range of the general specifications may cause electric shock, fire, malfunction, and damage to or deterioration of the product.
- Insert the module's mounting latch into the base unit's mounting cutout while pressing the module's loading lever, which is located at the bottom of the module. Improper installation may result in a malfunction or breakdown, or may cause the module to fall off.
To install the module in a place subject to strong vibration or impact, secure it with mounting.
- Tighten the screw within the range of specified torque.
Loose screws may result in malfunctioning or cause the module to fall off. If the screws are too tight, it may damage the screws, and as a result the module may malfunction or fall off.
- Switch all phases of the external power supply off when mounting or removing the module.
Not doing so may cause damage of the product.
- Do not directly touch the conductive area or electronic components of the module.
Doing so may cause malfunction or failure in the module.

[WIRING PRECAUTIONS]

DANGER

- Switch all phases of the external power supply of the whole system off when installing or placing wiring.
Not doing so may cause electric shock or damage to the product.

CAUTION

- Solder the coaxial cable's connector properly.
Improper soldering may cause the module to malfunction.
- Be careful not to let foreign matters such as sawdust or wire chips get inside the module.
These may cause fires, failure or malfunction.
- The top surface of the module is covered with protective film to prevent foreign objects such as cable offcuts from entering the module when wiring.
Do not remove this film until the wiring is complete.
Before operating the system, be sure to remove the film to provide adequate heat ventilation.
- Be sure to fix communication cables or power cables leading from the module by placing them in the duct or clamping them.
Cables not placed in the duct or without clamping may hang or shift, allowing them to be accidentally pulled, which may cause a module malfunction and cable damage.
- When removing the communication cable or power cables from the module, do not pull the cable. When removing the cable with a connector, hold the connector on the side that is connected to the module.
When removing the cable connected to the terminal block, first loosen the screws on the terminal block.
Pulling the cable that is still connected to the module may cause malfunction or damage to the module or cable.

Revisions

*The manual number is given on the bottom left of the back cover.

Print Date	*Manual Number	Revision
SEP., 2000	IB(NA)-0800145-A	First edition
Mar., 2001	IB(NA)-0800145-B	Model addition QJ72LP25G

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About the Manuals

The following manuals are also related to this product.
In necessary, order them by quoting the details in the tables below.

Related Manuals

Manual name	Manual No. (Model code)
Q corresponding MELSECNET/H Network System Reference Manual (Remote I/O network)	SH-080124 (13JF96)
Q corresponding MELSECNET/H Network System Reference Manual (PLC to PLC network)	SH-080049 (13JF92)

Conformation to the EMC Directive and Low Voltage Instruction

For details on making Mitsubishi PLC conform to the EMC directive and low voltage instruction when installing it in your product, please refer to Chapter 3, "EMC Directive and Low Voltage Instruction" of the PLC CPU User's Manual(Hardware).

The CE logo is printed on the rating plate on the main body of the PLC that conforms to the EMC directive and low voltage instruction

1. Overview

This manual explains how to handle the MELSECNET/H network module, model numbers QJ72LP25-25, QJ72LP25G and QJ72BR15 (hereinafter referred to as the network module).

After unpacking the network module, confirm that the following products are enclosed.

Model number	Description	Quantity
QJ72LP25-25	Model QJ72LP25-25 MELSECNET/H network module (optical link type)	1
QJ72LP25G	Model QJ72LP25G MELSECNET/H network module (optical link type)	1
QJ72BR15	Model QJ72BR15 MELSECNET/H network module (coaxial bus type)	1
	F-type connector	1

Important

The coaxial bus-type network system requires terminal resistors at both terminal stations of the network. The user should arrange for terminal resistors, since the QJ71BR11 does not come with terminal resistors.

* Terminal resistor (75 Ω)

- A6RCON-R75
- BNC-TMP-05 (75) (Manufactured by Hirose Electric Co., Ltd.)

2. Performance Specifications

The following table shows the performance specifications for the network module:

Item		Specifications	
		QJ72LP25-25	QJ72LP25G
Maximum number of link points per network	LX/LY	8192 points	
	LB	16383 points	
	LW	16383 points	
Maximum number of link points per station		Remote master station to Remote I/O station Remote I/O station to Remote Master station $\{(LB + LY) / 2 + LW \times 2\} \leq 1600$ bytes	
Maximum number of link points per station		$X + Y \leq 4096$ point When X/Y number overlaps, only one side becomes the object of the point.	
Communication speed		10Mbps/25Mbps (Switch changing)	10Mbps
Communication method		Token ring	
Synchronous method		Frame synchronous method	
Transmission path format		Duplex loop	
Maximum number of networks		239	
Maximum number of groups		32	
Number of connected stations		65 stations (Remote master station: 1, Remote I/O station: 64)	
Overall distance		30 km (98430 ft.)	
Distance between stations *2	10Mbps	SI optical cable: 500 m (1640.5 ft.) SI type H-PCF optical cable :1 km (3281 ft.) GI type H-PCF optical cable :1 km (3281 ft.) QSI optical cable:1 km (3281 ft.)	GI optical cable: 2 km (6562 ft.)
	25Mbps	SI optical cable:200 m (656.2 ft.) SI type H-PCF optical cable :400m (1312.4 ft.) GI type H-PCF optical cable :1 km (3281 ft.) QSI optical cable:1 km (3281 ft.)	-
Connection cable		Optical fiber cable (Arranged by user *3)	
Applicable connector		2-core optical connector plug (Arranged by user *3)	
Base unit installation position		CPU slot	
5 VDC current consumption (A)		0.89	
External dimensions (mm (in.))		98 (3.86) (H) × 27.4 (1.08) (W) × 90 (3.54) (D)	
Weight (kg)		0.15	

*1: Mode selection is performed using network parameters.

*2: There are restrictions to the distance between stations, being determined according to the type of cable and number of stations. See sections 5.1 .

*3: Specialised training and specific tools are required to connect the connector to the optical-fiber cable; the connector itself is a custom product. Please contact your nearest Mitsubishi Electric System Service Corporation when purchasing these items.

For general specifications of the network module, refer to the user's manual for the CPU that is to be used.

Item	Specifications	
	QJ72BR15	
Maximum number of link points per network	LX/LY	8192 points
	LB	16383 points
	LW	16383 points
Maximum number of link points per station	Remote master station to Remote I/O station Remote I/O station to Remote Master station $\{(LB + LY) / 2 + LW \times 2\} \leq 2000$ bytes	
Maximum number of link points per station	$X + Y \leq 4096$ point When X/Y number overlaps, only one side becomes the object of the point.	
Communication speed	10 Mbps	
Communication method	Token bus	
Synchronous method	Frame synchronous method	
Transmission path format	Single bus	
Maximum number of networks	239	
Maximum number of groups	32	
Number of connected stations	32 stations (control station: 1, normal station: 31)	
Overall distance	500 m (1640.5 ft.) (5C-2V) 300 m (984.3 ft.) (3C-2V) Can be extended to a maximum of 2.5 km (8202.5 ft.) using maximum 4 repeater modules (A6BR10, A6BR10-DC).	
Distance between stations *2	500 m (1640.5 ft.) (5C-2V) 300 m (984.3 ft.) (3C-2V)	
Connection cable	Coaxial cable Equivalent to 3C-2V, 5C-2V (Arranged by user)	
Applicable connector	BNC-P-3-Ni-CAU (For 3C-2V), BNC-P-5-Ni-CAU (For 5C-2V) Equivalent to (DDK)	
Base unit installation position	CPU slot	
5 VDC current consumption (A)	1.10	
External dimensions (mm (in.))	98 (3.86) (H) \times 27.4 (1.08) (W) \times 90 (3.54) (D)	
Weight (kg)	0.16	

*1: Mode selection is performed using network parameters.

*2: There are restrictions to the distance between stations, being determined according to the type of cable and number of stations. See sections 5.2.

For general specifications of the network module, refer to the user's manual for the CPU that is to be used.

3. Handling

CAUTION

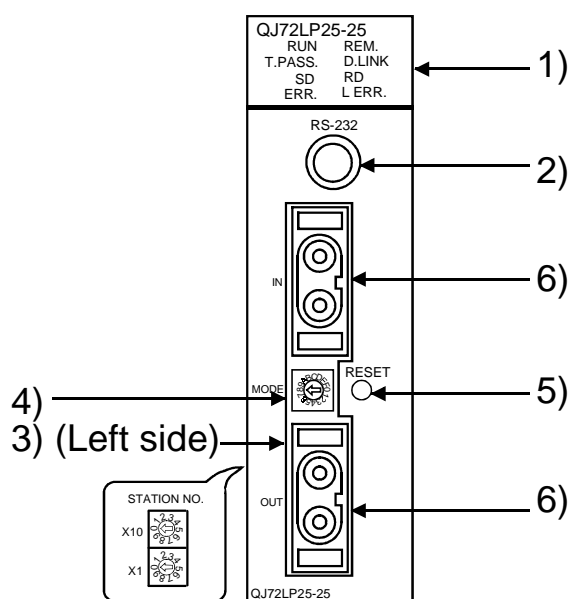
- Use the PLC in an environment that meets the general specifications contained in CPU module user's manual.
Using this PLC in an environment outside the range of the general specifications may cause electric shock, fire, malfunction, and damage to or deterioration of the product.
- Insert the module's mounting latch into the base unit's mounting cutout while pressing the module's loading lever, which is located at the bottom of the module. Improper installation may result in a malfunction or breakdown, or may cause the module to fall off. To install the module in a place subject to strong vibration or impact, secure it with mounting screws using the specified clamping torque. Loose screws may result in malfunctioning or cause the module to fall off. If the screws are too tight, it may damage the screws, and as a result the module may malfunction or fall off.
- Switch all phases of the external power supply off when mounting or removing the module.
Not doing so may cause damage of the product.
- Do not directly touch the conductive area or electronic components of the module.
Doing so may cause malfunction or failure in the module.

3.1 Handling Precautions

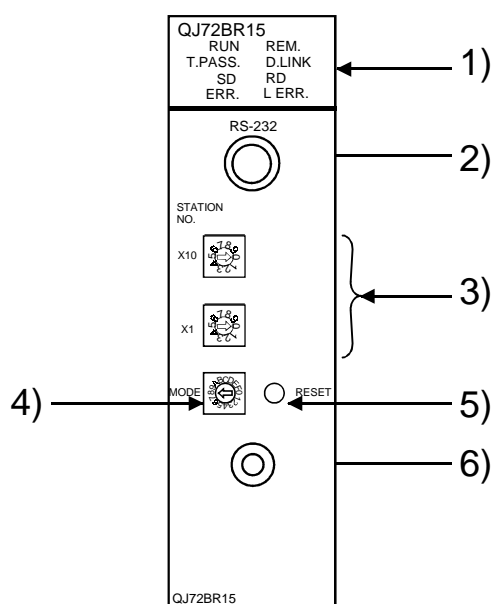
- (1) Since the module case is made of resin, do not drop it or subject it to strong impact.
- (2) The module can easily be secured to the base unit using the hooks located at the top of the module. However, if the module is to be placed in an area that is subject to strong vibration or impact, we recommend that it be secured with module mounting screws (provided by the user). In that case, tighten the module mounting screws within the following range. Module mounting screws (M3 × 12): The range of clamping torque is 36 to 48 N·cm .

4. Part Identification Names

(a) QJ72LP25-25, QJ72LP25G



(b) QJ72BR15



Number	Name
1)	Display LED
2)	RS-232 connector
3)	Station number setting switches

Number	Name
4)	Mode setting switch
5)	RESET switch
6)	Connector



(1) Display contents for LEDs

QJ72LP25-25			
RUN	<input type="checkbox"/>	REM.	<input type="checkbox"/>
T.PASS	<input type="checkbox"/>	D.LINK	<input type="checkbox"/>
SD	<input type="checkbox"/>	RD	<input type="checkbox"/>
ERR.	<input type="checkbox"/>	L.ERR.	<input type="checkbox"/>

LED name	Display contents
RUN	On: Operating normally Off: WDT error occurred
T. PASS	On: Executing baton pass Flicker: Executing test Off: Baton pass not yet executed (host is disconnecting)
SD	On: Data being transmitted Off: Data not yet transmitting
ERR.	On: Setting error occurred Flicker: Error detected by a test Off: No setting error
REM.	On: Operating normally Flicker: Flash ROM is being written or the device of the parameter is being tested. Off: WDT error, Fuse break off, Unit verify error occurred
D. LINK	On: Data link being executed Off: Data link not yet executed
RD	On: Data being received Off: Data not yet received
L. ERR.	On: Communication error occurred Off: No communication error

(2) Setting contents for each switch

(a) Station number setting switches

STATION NO.
10s unit → X10 
1s unit → X1 

Switch name	Setting content	Setting range	Setting at time of shipment
Station number setting switches	Sets the station number	1 to 64: Remote I/O station Setting error for other than the above	1

(b) Mode setting switch

1) QJ72LP25-25

MODE 

Switch name	Setting content	Setting range	Setting at time of shipment
Mode setting switch *1	Sets the operating mode	0: On-line 1: Self-loopback test 2: Internal self-loopback test 3: Hardware test	0
		4: On-line 5: Self-loopback test 6: Internal self-loopback test 7: Hardware test	
		8 to F: Use prohibited	

2) QJ72LP25G,QJ72BR15

Switch name	Setting content	Setting range	Setting at time of shipment
Mode setting switch	Sets the operating mode	0: On-line 1: Self-loopback test 2: Internal self-loopback test 3: Hardware test 4 to F: Use prohibited	0

*1 :Remote I/O network when making to online with Mode setting switch remote master station and remote I/O station of network is made the switch the same set.

5. External Wiring

DANGER

- Switch all phases of the external power supply of the whole system off when installing or placing wiring.
Not doing so may cause electric shock or damage to the product.

CAUTION

- Solder the coaxial cable's connector properly.
Improper soldering may cause the module to malfunction.
- Be careful not to let foreign matters such as sawdust or wire chips get inside the module.
These may cause fires, failure or malfunction.
- The top surface of the module is covered with protective film to prevent foreign objects such as cable offcuts from entering the module when wiring.
Do not remove this film until the wiring is complete.
Before operating the system, be sure to remove the film to provide adequate heat ventilation.
- Be sure to fix communication cables or power cables leading from the module by placing them in the duct or clamping them.
Cables not placed in the duct or without clamping may hang or shift, allowing them to be accidentally pulled, which may cause a module malfunction and cable damage.
- When removing the communication cable or power cables from the module, do not pull the cable. When removing the cable with a connector, hold the connector on the side that is connected to the module.
When removing the cable connected to the terminal block, first loosen the screws on the terminal block.
Pulling the cable that is still connected to the module may cause malfunction or damage to the module or cable.

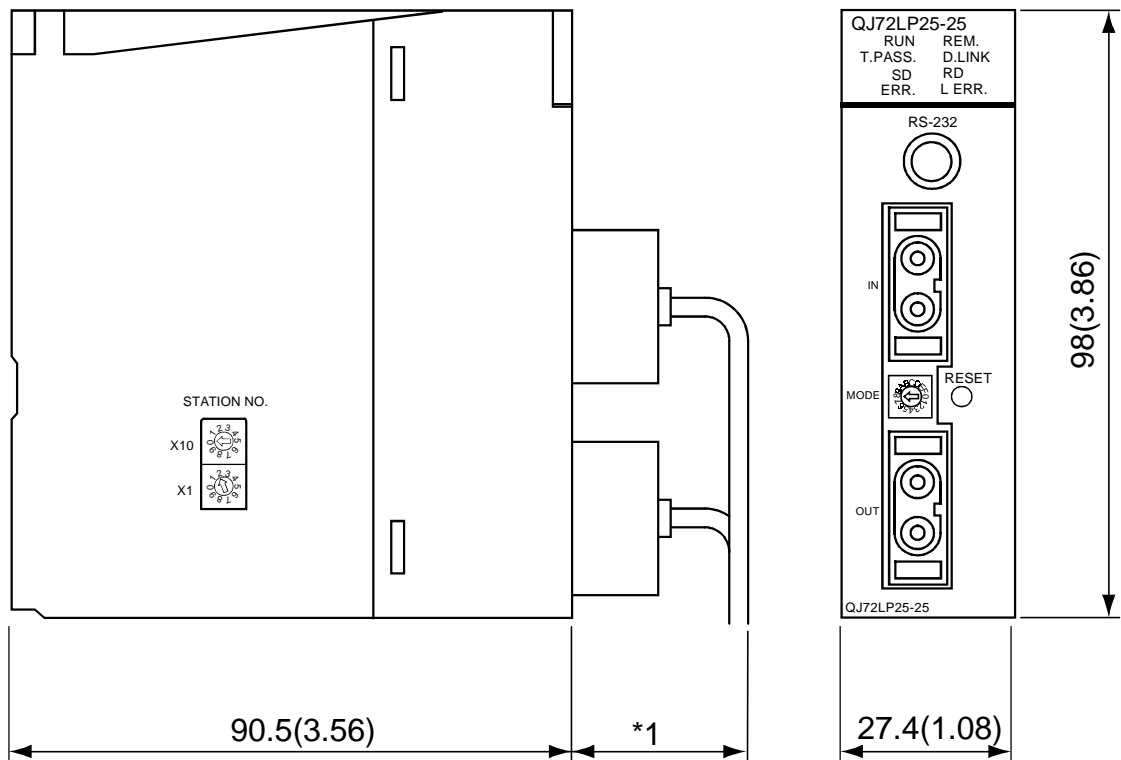
Please refer to the user's manual of connected master module for the wiring for network system.

Please wire IN/OUT of the connector for the cable correctly.

Please do loopback test, the set confirmation test, and the bureau order confirmation test after wiring. It might be generated that a baton abnormal passing cannot be generated when miswiring and the downed bureau which cannot do the loopback of an arbitrary bureau do the row again even by the reclosing of the power supply.

6. External Dimensions Diagram

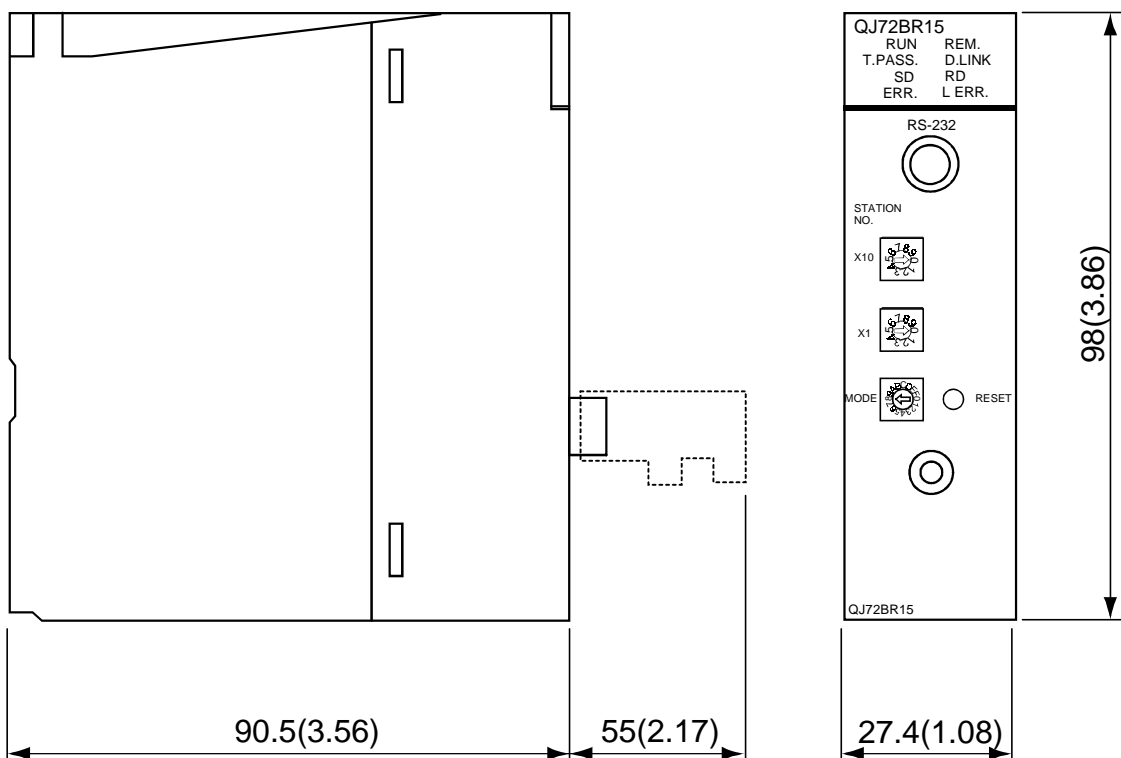
(1) QJ72LP25-25, QJ72LP25G



*1: Please contact your nearest Mitsubishi Electric System Service Corporation for detail.

Unit: mm (in.)

(2) QJ72BR15



Unit: mm (in.)

Warranty

Mitsubishi will not be held liable for damage caused by factors found not to be the cause of Mitsubishi; machine damage or lost profits caused by faults in the Mitsubishi products; damage, secondary damage, accident compensation caused by special factors unpredictable by Mitsubishi; damages to products other than Mitsubishi products; and to other duties.

⚠ For safe use

- This product has been manufactured as a general-purpose part for general industries, and has not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the product for special purposes such as nuclear power, electric power, aerospace, medicine or passenger movement vehicles, consult with Mitsubishi.
- This product has been manufactured under strict quality control. However, when installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system.

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